

Notice of Allowability

Application No.

10/747,931

Examiner

Juan A. Torres

Applicant(s)

SAMUELI ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment - After Non-Final Rejection filed on 07/02/2007.
2. ☒ The allowed claim(s) is/are 2-5, 12, 17, 18, 22 and 23 (renumbered 1-9).
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

DETAILED ACTION

Drawings

In view of the amendment filed on 07/02/2007, the Examiner withdraws drawing objections of the previous Office action.

Specification

The modifications to the specification were received on 07/02/2007. The Examiner accepts these modifications.

In view of the amendment filed on 07/02/2007 and the present Examiner Amendment, the Examiner withdraws specification objections of the previous Office action.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Glenn J. Perry on 07/10/2007.

The application has been amended as follows:

- a) In line 14 of claim 2, the recitation "multiplication" is changed to "multiplication"

b) In line 12 of claim 12, the recitation "multiplification" is changed to "multiplication"

c) In line 21 of claim 17, the recitation "multiplification" is changed to "multiplication"

d) The recitation "corresponding to the converter 108 in FIG. 2" in page 14 line 1 is changed to "corresponding to the converter 108 in FIG. 3"

Allowable Subject Matter

Claims 2-5, 12, 17, 18, 22 and 23 (renumbered 1-9) are allowed.

The following is an examiner's statement of reasons for allowance: claims 2-5, 12, 17, 18, 22 and 23 (renumbered 1-9) are allowed because the references cited fail to teach, as applicant has, a method of recovering information from a received signal comprising receiving a carrier signal modulated with an the information, downconverting the carrier signal using a first fixed frequency oscillator to generate a downconverted signal, and processing, using a digital integrated circuit, the downconverted signal to generate an output signal representing the information, the processing including: sampling the at least one downconverted signal using a second fixed frequency oscillator to generate a digital signal, regulating by a first digital feedback loop a frequency at which the output signal is generated, the first feedback loop carrying out processes of complex multiplication, variable interpolation, carrier recovery and digital frequency synthesizing to generate multiplying signals for the complex multiplication, and regulating, by a second digital feedback loop, a sampling time associated with the output signal, the second digital feedback loop carrying out

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processes of variable interpolation, and a symbol recovery, the processes of carrier recovery and symbol recovery both receiving signals resulting from variable interpolation; a method of recovering information from a received signal comprising receiving a carrier signal modulated with information, processing, using a digital integrated circuit, the modulated carrier signal to generate an output signal representing the information, the processing including subsampling the carrier signal using a fixed frequency oscillator to generate at least one digital IF signal regulating by a first digital feedback loop a frequency at which the output signal is generated, the first feedback loop carrying out processes of complex multiplication, variable interpolation, carrier recovery and digital frequency synthesizing to generate multiplying signals for the complex multiplication, and regulating, by a second digital feedback loop, a sampling time associated with the output signal, the second digital feedback loop carrying out processes of variable interpolation, and a symbol recovery, the processes of carrier recovery and symbol recovery both receiving signals resulting from variable interpolation; and a method of recovering information from a received signal modulated with that information, comprising receiving a signal modulated with an information signal, multiplying the received signal using signals derived from a first fixed oscillator to generate a downconverted signal having in-phase and quadrature components, filtering the downconverted signal, processing, using a digital integrated circuit, the downconverted signal to generate an output signal representing the information, the processing including sampling the in-phase and quadrature components of the downconverted signal using a second fixed frequency oscillator to generate a digital

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signal having in-phase and quadrature components, regulating by a first digital feedback loop a frequency at which the output signal is generated, the first feedback loop carrying out processes of complex multiplication, variable interpolation, carrier recovery and digital frequency synthesizing to generate multiplying signals for the complex multiplication, and regulating, by a second digital feedback loop, a sampling time associated with the output signal, the second digital feedback loop carrying out processes of variable interpolation, and a symbol recovery, the processes of carrier recovery and symbol recovery both receiving signals resulting from variable interpolation, as the applicant has claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan A. Torres whose telephone number is 571-272-3119. The examiner can normally be reached on 8-6 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Juan Alberto Torres
07-10-2007


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PRIMARY EXAMINER